

European Strategy for Future Neutrino Physics

A workshop to discuss the possibilities for future neutrino investigations in Europe and the links to CERN

A 3-day workshop is scheduled at CERN for October 1-3 to consider the future of neutrino physics with emphasis on the development work required for accelerator based neutrino physics. The workshop is being organized jointly by the CERN Management, the Scientific Policy Committee and the European Committee for Future Accelerators. This is in line with the conclusions of the European Strategy for Particle Physics

"4. [...] it is vital to strengthen the advanced accelerator R&D programme; a coordinated programme should be intensified, to develop the CLIC technology and high performance magnets for future accelerators, and to play a significant role in the study and development of a high-intensity neutrino facility.

6. Studies of the scientific case for future neutrino facilities and the R&D into associated technologies are required to be in a position to define the optimal neutrino programme based on the information available in around 2012; Council will play an active role in promoting a coordinated European participation in a global neutrino programme. (CERN strategy document, 2006)"

The workshop is also directly related to the work of the Panel on Future Neutrino Facilities, established by the Scientific Policy Committee in December 2008 at the request of the CERN Council. This request concerns "Relations between CERN and the ongoing development work regarding future neutrino facilities", and specifically requests answers concerning the importance of precise measurements of the neutrino oscillation parameters, CERN's role in the R&D work for future neutrino facilities, irrespective of where they would be sited, and to what degree neutrino experimentation should have a place on the future CERN roadmap. The SPC report will be presented to the Council in December 2009.

Possibilities at CERN could be considered on the following basis: in conjunction with the LHC injector upgrade, it is expected that, by the end of the next decade, CERN will have a 4-5 GeV linear accelerator, the SPL, and a 50 GeV synchrotron PS2, able to operate at a beam power of 200 kW as LHC injectors. The SPL could be built in such a way as to be upgradable to 4 MW beam power or more. Decisions for construction of these machines should take place in 2012.

The October workshop will allow the panel to collect the opinions of the European neutrino physics community engaged in either current neutrino experiments or R&D for future ones as well as the CERN accelerator experts. Whilst the emphasis will be on accelerator based neutrino physics, reactor and non-accelerator experiments related to the mass and nature of the neutrino will also be reviewed.. The format of the Workshop will consist of mini-review talks followed by a substantial discussion period for input from the community. It will conclude with a round table discussion.

A workshop Web page (<http://indico.cern.ch/event/59378>) has been set up and further information will appear soon.. The workshop is open to everyone but registration is required for organizational reasons. Proceedings of the workshop will be published as a CERN report within a month of the workshop.

CERN Director for Research



Sergio Bertolucci

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